PS 1-173

## THE IMPACT OF INADEQUATE DISINFECTION ON OUTBREAK OF CARBAPENEM-RESISTANT *ACINETOBACTER BAUMANNII* IN A MEDICAL INTENSIVE CARE UNIT

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**Purpose**: This study was conducted to investigation of an outbreak caused by carbapenem-resistant *A. baumannii* (CRAB) in a medical intensive care unit (ICU) in a regional hospital.
**Methods**: In response to carbapenem-resistant *A. baumannii* (CRAB) outbreak from October 2012 to February 2013, we developed several infection control measures including extensively review process of environmental cleaning and disinfection, and using molecular methods to identify each clinical and environmental CRAB isolate.
**Results**: During this period of five months, 22 patients had CRAB colonization and 18 patients had CRAB infections. In-hospital mortality was significantly higher among patients with infection than colonization (44.4% vs 9.1%, $p = 0.028$). Additionally, nine environmental specimens, including five specimens collected after terminal disinfection, were positive for CRAB. Nine of 12 environmental isolates and 31 of 36 available clinical isolates belong to one unique pulsotype, which was confirmed by molecular methods. We found the concentration of disinfectant - sodium hypochlorite was inadequate, which was only 0.08%. After correction for environmental cleansing and aforementioned surveillance study, there was no more CRAB on the control panel surfaces of the medical equipment, and patients in the ICU. Additionally, *in vitro* study of CRAB against different concentration of sodium hypochlorite showed that 0.5% sodium hypochlorite eradicates CRAB after 30 seconds of inoculation, but 0.08% sodium hypochlorite can only reduce the bacterial load.
**Conclusions**: This study highlights the importance of preparation of disinfectant and adequate environmental disinfection in the control of CRAB outbreak in the ICU.

PS 1-174

## THE TREND AND ANALYSIS OF COMMON SITES INFECTION IN RECENT 5 YEAR AT ONE REGIONAL HOSPITAL OF THE NORTHEN-TAIWAN

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**Purpose**: A local region teaching hospital providing important medical service at northeastern part of Taiwan, The multiple antibiotic strains often have an enormous influence on the bacterium infection percentage and the antibiotic nature in these five years, therefore provides clinician's the common part of infection data to make the appraisal treatment for the patient.
With the yearly inclination analysis (from2009 to 2012),we can have a clear concept of the distributing of bacteria and multiantibiotic resistance,which can be used as infectin monitors and clinican treatment.

PS 1-175

## CONTAINMENT OF A HOSPITAL-WIDE OUTBREAK OF CARBAPENEM RESISTANT ENTEROBACTERIACEAE: THE EXPERIENCE OF A HOSPITAL IN EAST MALAYSIA

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**Purpose**: In 2013, an outbreak of CRE Klebsiella Pneumoniae occurred in a 730 bedded government-funded hospital in East Malaysia. Active surveillance was initiated in June, 2013 which led to the discovery of more cases. The purpose of this study was to share experiences on surveillance activities and infection control interventions which had led to the containment of a hospital-wide outbreak of CRE.
**Methods**: The methods of surveillance adopted for this outbreak were active surveillance, passive case detection and contact screening. Hospital-wide interventions were launched to contain the outbreak comprising of mandatory reporting and isolation of such patients with strict adherence to good infection control practices.
**Results**: From the surveillance activities, 39% of cases were detected through active surveillance, 23% through contact screening and 38% of cases were detected through passive case detection. A peak in the number of cases detected was recorded in the month of August, 2013. Following the introduction of infection control interventions, the number of cases slowly declined with the outbreak declared being over by July of 2014.

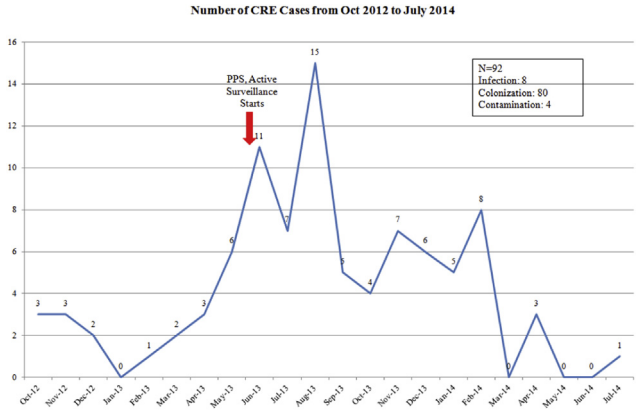


Figure: Number of CRE Cases Detected From Oct 2012 to July 2014.

**Conclusions**: From this study, good and timely infection control interventions together with active surveillance were proved effective in the containment of this outbreak. However, continued vigilance in the implementation of these hospital-wide interventions remains pivotal to sustained containment of the outbreak.

PS 1-176

## EXPERIENCES SHARE OF INVESTIGATE THE INCREASING RATES OF VRE ISOLATION AND ACTIVE SURVEILLANCE IN HOSPITAL

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**Purpose**: Our hospital continued monitoring to the multi drug resistance microorganisms. And designed many types of the information surveillance systems. One of them named "Microorganisms Surveillance Information System" exists the function of monitoring the Epidemiology, and it could be continuous monitoring. Vancomycin-resistant enterococci was first isolated in our hospital in 2005. Based on the results of the continuous monitoring, it shows the isolation rate of the VRE has the trend continuous increasing.
**Methods**: In recent years, found that it occurs sporadic at times each year. Once found the VRE detection unit increased, the infection control specialist will investigate immediately, they will do the comprehensive environmental inspection if needed, to clarify the possible sources of infection. And overall 2006 to 2014, we totally executed 3 times of the environmental inspection.- From the year 2013, began to do the proactive screening of cases of VRE strains for the new ICU stay. VRE positive patient needs to have the contact isolation.
**Results**: After executing this policy for 6 months, the statistical of VRE culture rate increased from 4% to 25%. But take the further analysis of the cases found most of the patients had no symptoms of infection.And during the screening, the VRE detection of cases no significant concentration from the non-ICU units.
**Conclusions**: When the MDRO bacteria isolates increased, do the intervention timely is necessary. If we could do the precautionary screening by the